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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,855	09/29/2003	Motohiko Matsushita	15115.091001	7968

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EXAMINER	
LAVARIAS, ARNEL C	
ART UNIT	**PAPER NUMBER**
2872	

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

A1C

Office Action Summary	Application No.	Applicant(s)	
	10/676,855	MATSUSHITA ET AL.	
	Examiner	Art Unit	
	Arnel C. Lavarias	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings were received on 9/29/03. These drawings are acceptable.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to *a single paragraph* on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should *avoid using phrases which can be implied*, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because of the following informalities:

The current abstract includes two paragraphs.

Abstract, line 1- 'The present invention provides an' should read 'An'

Abstract, line 4- delete 'present invention provides an'

Abstract, line 5- 'having' should read 'has'

Correction is required. See MPEP § 608.01(b).

5. The disclosure is objected to because of the following informalities:

Paragraph 0030, line 2- 'light guide plate' should read 'prism sheet'

Paragraph 0032, line 2- 'prism sheet' should read 'light guide plate'

Paragraph 0033, line 1- 'Figs. 8A, 8B and 8C are views' should read 'Fig. 8 is a view'

Paragraphs 0060, 0061, 0067, 0068, 0070, 0071, 0072, 0086- the various instances of 'a' should read 'α' to correlate with the variable definitions in Figure 12

Paragraph 0061, line 9- 'liking' should read 'linking'

Paragraph 0080, line 3- 'ling' should read 'line'

Paragraph 0093, line 1- '30' should read '27'

Paragraph 0093, line 10- '53' should read '65'.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3, 6, 11, 13-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Higuchi et al. (U.S. Patent No. 6222689).

Higuchi et al. discloses a diffusion sheet and an optical film (See for example Figures 1, 6-7, 14-24) having plural diffusion patterns formed on a light incident surface (See for

example 41 in Figure 6; 42 in Figure 14) and plural prisms formed on a light emitting surface (See for example 42 in Figure 14; 43 in Figure 15; AS in Figure 16), wherein each of the diffusion patterns has, in at least one section thereof, a first inclined surface that is curved (See for example Figure 21, 23-24) with a relatively small inclination and a second inclined surface that is oppositely inclined to the first inclined surface with a relatively great inclination. Higuchi et al. further discloses an angle of inclination of the first inclined surface gradually changing from the lowermost point to the uppermost point (See Figures 21, 23); a formula of $5° \leq a \leq 30°$ is established wherein an angle of inclination of a segment line connecting the lowermost point to the uppermost point is defined as a (See Figures 7, 21; a is approximately 5.6 degrees for segment 41a in Figure 7, wherein the angle of inclination is taken with respect to a line normal to surface 41c (i.e. parallel to light paths S22 and S11 in Figure 7)); the boundary area between the first inclined surface and the second inclined surface is formed smooth and curved (See Figure 21); each of the diffusion patterns having substantially the same shape to one another (See for example Figure 6, 14); a light source device including a light source (See L in Figure 6), a light guide plate (See 1 in Figure 6) that confines light from the light source for transmitting the same and emits the light from a light emitting surface, the above optical film (See 41 in Figure 6) arranged so as to face the light emitting surface of the light guide plate, and a liquid crystal display panel (See LP in Figure 6).

8. Claim 11 is rejected under 35 U.S.C. 102(b) as being anticipated by Clabburn (WO 00/41009).

Clabburn discloses a diffusion sheet (See for example Figures 1, 5, particularly Figure 5f) having plural diffusion patterns formed thereon, wherein each of the diffusion patterns has, in at least one section thereof, a first inclined surface that is curved with a relatively small inclination and a second inclined surface that is oppositely inclined to the first inclined surface with a relatively great inclination.

9. Claim 12 is rejected under 35 U.S.C. 102(b) as being anticipated by Clabburn.

Clabburn discloses a reflector (See for example Figures 1, 5, particularly Figures 1a, 1b) having plural diffusion patterns formed on a light-reflecting surface, wherein each of the diffusion patterns has, in at least one section thereof, a first inclined surface that is curved (See Figure 5f) with a relatively small inclination and a second inclined surface that is oppositely inclined to the first inclined surface with a relatively great inclination.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Higuchi et al. in view of Clabburn.

Higuchi et al. discloses the invention as set forth above in Claim 1, except for the formula $\begin{matrix}\theta_{max} - a \le 10^\circ \\ a - \theta_{min} \le 10^\circ\end{matrix}$ being established. However, Clabburn similarly teaches an

optical film (See for example Figures 1, 5, particularly Figure 5d, 5e, 5f) having plural diffusion patterns formed thereon, wherein each of the diffusion patterns has, in at least one section thereof, a first inclined surface (See for example surface having positive slopes in Figures 5d, 5e, 5f) that is curved with a relatively small inclination and a second inclined surface (See for example surface having negative slope in Figures 5d, 5e, 5f) that is oppositely inclined to the first inclined surface with a relatively great inclination. In addition, Clabburn teaches that the first inclined surface may have one or more inclined surface angles (See for example α, β, δ in Figures 5d, 5e, 5f). As an example, Clabburn discloses that α (i.e. θ_{min}) may be 8 degrees and β (i.e. θ_{max}) may be 14 degrees (See Figure 5d; Page 9). Thus, by geometry, the angle of inclination (i.e. a) of the segment connecting the lowest and highest point will lie between 8 and 14 degrees, such that $\begin{matrix}\beta - a \le 10^\circ \\ a - \alpha \le 10^\circ\end{matrix}$ will be true. Similar geometric relationships hold for multiple angles of inclination, such as for the structure shown in Figure 5f, wherein the minimum angle of inclination occurs at the lowest point and the maximum angle of inclination occurs at the highest point, and the angle of inclination will be an angle between the minimum and maximum angle of inclination. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the formula $\begin{matrix}\theta_{max} - a \le 10^\circ \\ a - \theta_{min} \le 10^\circ\end{matrix}$ be established, as taught by Clabburn, in the optical film of Higuchi et al., for the purpose of providing optimized diffusion characteristics and polar diffusion distributions based on the intended application.

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Higuchi et al. in view of Lee et al. (U.S. Patent No. 6611303).

Higuchi et al. discloses the invention as set forth above in Claim 1, except for the angle of inclination of the second inclined surface being approximately 70 degrees. However, Lee et al. teaches a diffusing sheet with attached prism sheet having prism shaped projections (See Figures 1, 3, 6), wherein the projections include a first inclined surface (See for example 133b in Figure 6) and a second inclined surface (See 133a in Figure 6), the second inclined surface being inclined at an angle θ approximately 70 degrees or greater with respect to horizontal (See Figures 3, 6). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the angle of inclination of the second inclined surface being approximately 70 degrees, as taught by Lee et al., in the optical film of Higuchi et al., for the purpose of improving light efficiency of the optical film.

13. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higuchi et al. in view of Parker et al. (U.S. Patent No. 6752505).

Higuchi et al. discloses the invention as set forth above in Claim 1, except for the prisms being randomly formed in size and position and arranged such that the axial directions are directed toward two or more directions. However, Parker et al. teaches light redirecting films for use in applications such as reflective liquid crystal displays, wherein the light redirecting film (See for example 2 in Figure 1; Figures 5-16), wherein the surface of the light redirecting film includes prism-shaped projections (See for example 5 in Figure 16) that may be randomly formed in size and position and arranged

such that the axial directions are directed toward two or more directions. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the prisms of the optical film of Higuchi et al. be randomly formed in size and position and arranged such that the axial directions are directed toward two or more directions, as taught by Parker et al., for the purpose of tailoring and redirecting more of the incident light from the backlight of the display toward a desired viewing angle.

14. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higuchi et al. in view of Tedesco (U.S. Patent No. 5861990).

Higuchi et al. discloses the invention as set forth above in Claim 1, except for the diffusion patterns being randomly formed in size and random position. However, it is well known in the art to fabricate the projections used in typical light diffusers such that the projections are all randomly formed in size and in random positions. For example, Tedesco teaches a conventional optical diffuser (See for example Figure 1), wherein the various projections on the surface of the optical diffuser (See for example 110, 122, 130 in Figure 1) are all fabricated with random sizes and at random positions on the surface. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the diffusion patterns on the optical film of Higuchi et al. be randomly formed in size and random position, as taught by Tedesco, for the purpose of providing a more narrower range of viewing angle while also providing proportionately brighter transmission within that viewing angle range.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 571-272-2315. The examiner can normally be reached on M-F 9:30 AM - 6 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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3/20/05